



Level 1-2 Service Manual

W370/W375

Tri-Band Wireless Telephone



W370/W375
GSM 900/1800/1900
GSM850/1800/1900

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Introduction

Motorola® Inc. maintains a worldwide organization that is dedicated to provide responsive, full-service customer support. Motorola products are serviced by an international network of company-operated product care centers as well as authorized independent service firms.

Available on a contract basis, Motorola Inc. offers comprehensive maintenance and installation programs that enable customers to meet requirements for reliable, continuous communications. To learn more about the wide range of Motorola service programs, contact your local Motorola products representative or the nearest Customer Service Manager.

Product Identification

The model number on a label (usually on the housing) identifies Motorola products. Use the entire model number when inquiring about the product. Numbers are also assigned to chassis and kits.

Use these numbers when requesting information or ordering replacement parts.

Product Names

Product names are listed on the front cover. Product names are subject to change without notice. Some product names, as well as some frequency bands, are available only in certain markets.

Product Changes

When electrical, mechanical or production changes are incorporated into Motorola products, a revision letter is assigned to the chassis or kit affected, for example: -A, -B, or -C, and so on. The chassis or kit number, complete with revision number is imprinted during production. The revision letter is an integral part of the chassis or kit number and is also listed on schematic diagrams, and printed circuit board layouts.

Regulatory Agency Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:

- This device may not cause any harmful interference, and this device must accept interference received, including interference that may cause undesired operation
- This class B device also complies with all requirements of the Canadian Interference-Causing Equipment Regulations (ICES-003). Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Computer Program Copyrights

The Motorola products described in this manual may include Motorola computer programs stored in semiconductor memories or other media that are copyrighted with all rights reserved worldwide to Motorola. Laws in the United States and other countries preserve for Motorola, Inc. certain exclusive rights to the copyrighted Introduction computer programs, including the exclusive right to copy, reproduce, modify, decompile, disassemble, and reverse-engineer the Motorola computer programs in any manner or form without Motorola's prior written consent. Furthermore, the purchase of Motorola products shall not be deemed to grant either directly or by implication, estoppel, or otherwise, any license or rights under the copyrights, patents, or patent applications of Motorola, except for a nonexclusive license to use the Motorola product and the Motorola computer programs with the Motorola product.

About This Service Manual

Using this service manual and the suggestions contained in it assures proper installation, operation, and maintenance of W370/W375 telephones. Refer questions about this manual to the nearest Customer Service Manager. This manual contains mechanical service information required for the equipment described and is current as of the printing date.

Audience

This document aids service personnel in testing and repairing W370/W375 telephones. Service personnel should be familiar with electronic assembly, testing, and troubleshooting methods, and with the operation and use of associated test equipment.

Scope

This manual provides basic information relating to W370/W375 telephones, and also provides procedures and processes for repairing the units at Level 1 and 2 service centers, including:

- Unit swap out
- Repairing of mechanical faults
- Basic modular troubleshooting
- Testing and verification of unit functionality

Initiate warranty claims and send faulty modules to Level 3 or 4 repair centers.

Conventions

Special characters and typefaces, listed and described below, are used in this publication to emphasize certain types of information.



Note: Emphasizes additional information pertinent to the subject matter.




Caution: Emphasizes information about actions that may result in equipment damage.



Warning: Emphasizes information about actions that may result in personal injury.



Keys to be pressed are represented graphically. For example, instead of "Press the Menu Key", you will see "Press .

Information from a screen is shown in text as similar as possible to what appears in the display. For example, ALERTS or ALERTS.

Information that you need to type is printed in **boldface** type.

Warranty Service Policy

The product is sold with the standard 12-month warranty terms and conditions. Accidental damage, misuse, and extended warranties offered by retailers are not supported under warranty.

Non-warranty repairs are available at agreed fixed repair prices.

Out of Box Failure Policy

The standard out of box failure criteria applies. Customer phones that fail very early on after the date of sale are to be returned to Manufacturing for root cause analysis, to guard against epidemic criteria. Manufacturing to bear the costs of early life failure.

Product Support

The customer's original phones will be repaired but not refurbished as standard. Appointed Motorola Service Hubs will perform warranty and non-warranty field service for level 2 (assemblies) and level 3 (limited Transceiver component). Motorola High Tech Centers will perform level 4 (full component) repairs.

Customer Support

Customer support is available through dedicated Call Centers and in-country help desks. Product-Service training should be arranged through the local Motorola Support Center.

Parts Replacement

When ordering replacement parts or equipment, include the Motorola part number and description used in the service manual. When the Motorola part number of a component is not known, use the product model number or other related major assembly along with a description of the related major assembly and of the component in question. In the U.S.A., to contact Motorola, Inc. on your TTY, call: 800-793-7834

Accessories and Aftermarket Division (AAD)

Replacement parts, test equipment, and manuals can be ordered from AAD. For EMEA spare parts call +49 461 803 1638. For Asia spare parts call +65 648 62995.

U.S.A.

Phone: 800-422-4210

FAX: 800-622-6210

Outside U.S.A.

Phone: 847-538-8023

FAX: 847-576-3023

Specifications (W370/W375)

General Functions	Specification
Dimensions	99*45*18.6mm
Weight	95g
External LCD	65K color TFT, Active area 28.032 x 35.04mm, Pixel Resolution: 128(RGB)x160
Sub-LCD	N/A
Band	"EGSM/DCS/PCS" or "GSM850//DCS/PCS"
Battery	850mAh Li Ion battery
Product type	Clamshell
Antenna	Internal
Frequency Range (EGSM)	Tx 880-915MHz, Rx 925-960MHz
Frequency Range (DCS)	Tx 1710-1785MHz, Rx 1805-1880MHz
Frequency Range (GSM850)	Tx 824-849MHz, Rx 869-894MHz
Frequency Range (PCS)	Tx 1850-1910MHz, Rx 1930-1990MHz
Channel Spacing	200kHz
Channels	174 in EGSM, 124 in GSM859; 374 in DCS, 299 in PCS
Modulation	GMSK at BT=0.3
Transmitter Phase Accuracy	5 degrees RMS, 20 degrees peak
Duplex spacing	45MHz EGSM/GSM850, 95MHz DCS, 80MHz PCS
Frequency Stability	+/- 0.1ppm of downlink frequency (RX)
Operating voltage	3.53V ~ 4.2V
Average Transmit Current	Power Level 5: 280mA, Power Level 19: 115mA
Average Standby Current	DRX2: 6.5mA, DRX9: 3mA
FM Radio Frequency Range	87.5-108MHz
Operating Temperature	-10°C to 55°C
Storage Temperature	-40°C to 85°C
Battery Life	Talking time: 4.2~8.24 hours; Standby time: 130~293 hours
Battery Charge Time	240 Mins to 90% 850mAH Capacity
Alert Volume	Max 95dB@ 5 cm, 0.5 watts input

Transmitter Functions	Specification
RF Power Output	EGSM/GSM850: 32.5dBm (TYP), DCS/PCS: 30dBm (TYP)
Output Impedance	50 ohm (TYP)
Spurious Emissions	-36 dBm from 0.1 to 1GHz, -30 dBm from 1 to 4GHz

Receiver Functions	Specification
Receiver Sensitivity	EGSM/GSM850: -107dBm, DCS/PCS: -106dBm
RX Bit Error Rate (100K bits) type II	<2%
Channel Hop Time	500 microseconds
Time to Camp	Approximately 6~10 Second

Speech Coding Functions	Specification
Speech Coding Type	Regular pulse excitation/linear predictive coding with long term prediction (PRE LPC with LTP)
Bit Rate	13.0 Kbps
Frame Duration	20 ms
Block Length	260 bits
Classes	Class 1 bits =182 bits; Class 2 bits = 78 bits
Bit Rate with FEC Encoding	22.8 Kbps

Product Overview

The Motorola W370/W375 features a global system for mobile communications wireless interface and general packet radio service (GPRS) transport technology. It also features a simplified icon and graphical user interface (UI) for easier operation in addition to short message service text messaging (SMS), speed dialing, quick dialing, an alarm, a calculator, games, and an address book. The W370/W375 is a tri-band phone that allows for roaming within the EGSM900 / DCS1800/PCS1900 or GSM850 / DCS1800/PCS1900.

W370/W375 telephones support GPRS class 8 and SMS in addition to traditional circuit switched transport technologies. GPRS, where available, provides substantial increases in mobile data communications performance and the efficient use of radio spectrum. Data transmission rates for GSM networks can potentially increase from the current rate of 9.6 kbps up to a theoretical maximum of 171.2 kbps. An increased data rate is by no means the only benefit provided by GPRS. A key advantage is the provision of a permanent virtual connection to the network. This "always on" connection is possible because GPRS uses packet data transfer so that, for example, email can be downloaded in "background mode." There is no need for the user to reconnect before requesting a service, eliminating connection set-up delays and adding convenience and immediacy to data services access. The "virtual" nature of this connection means that network resources are not consumed during periods when a user is not actually sending or receiving data.

The telephones are made of plastic. The display and speaker, as well as the 25- key keypad, transceiver printed circuit board (PCB), microphone, charger and headphone connectors, and power button are contained within clam shell form-factor housing. The userreplaceable 850 mAh Lithium-Ion (Li-Ion) battery provides up to 4.2-8.24 hours of talk time with up to 130-293 hours of standby time. The phone accepts 1.8V/3V mini subscriber identity module (SIM) cards that fit into the SIM holder next to the battery. These telephones feature a 128 x 160 pixel color graphics display and an internal antenna.

Features

W370/W375 telephones use advanced, self-contained, sealed, custom integrated circuits to perform the complex functions required for GSM GPRS communication. Aside from the space and weight advantage, microcircuits enhance basic reliability, simplify maintenance, and provide a wide variety of operational functions.

Features available in this family of telephones include:

- A 128 x 160 pixel color graphics display
- Internal antenna
- Caller line identification (CLI) (Network, subscription and SIM card or service provider dependent feature. Not available in all areas.)
- Lower voltage technology that provides increased standby and talk times
- Extended GSM (EGSM) channels
- Tri-coder/decoder (CODEC) that allows full rate, half rate, and enhanced full rate modes of transmission
- Display animation
- VibraCall[®] vibrating alert
- 5-Way navigation key
- Simplified text entry using iTAP[™] predictive text entry
- SIM Toolkit[™] Class 2 (STK) (Network, subscription and SIM card or service provider dependent feature. Not available in all areas.)

- Backlight
- Speed-, Quick- and One-Touch dialing
- Call Forwarding and Holding
- Customized Menus
- Personal management tools calculator with currency converter, real time clock with date, reminders, and caller profiling
- Other features

Caller Line Identification

Upon receipt of a call, the calling party's phone number is compared to the phone book. If the number matches a phone book entry, that name will be displayed. If there is no phone book entry, the incoming phone number will be displayed. In the event that no caller identification information is available, an incoming call message is displayed.

Simplified Text Entry

The W370/W375 features iTAP™ predictive text entry. Press a key to generate a character and a dynamic dictionary uses this to build and display a set of word or name options. The iTAP™ feature may not be available on the phone in all languages.

SIM Toolkit™ - Class 2

SIM Application Toolkit is a value-added service delivery mechanism that allows GSM operators to customize the services they offer their customers, from the occasional user who requests sports news and traffic alerts, to a high call time business user who receives stock alerts and checks flight times. Operators can now create their own value-added services menu quickly and easily in the phone.

The customized menu will appear as the first menu and may be updated over-the-air with new services when customers request them.

Other Features

Detailed descriptions of the other features can be found in the appropriate W370/W375 telephone user guides listed in the Related Publications section at the end of this manual.

General Functions

Controls, Indicators, and Input/Output (I/O) Connectors

The W370/W375 phone's controls are located on the front side of the device and on the keyboard as shown in below. Indicators icons are displayed on the LCD.

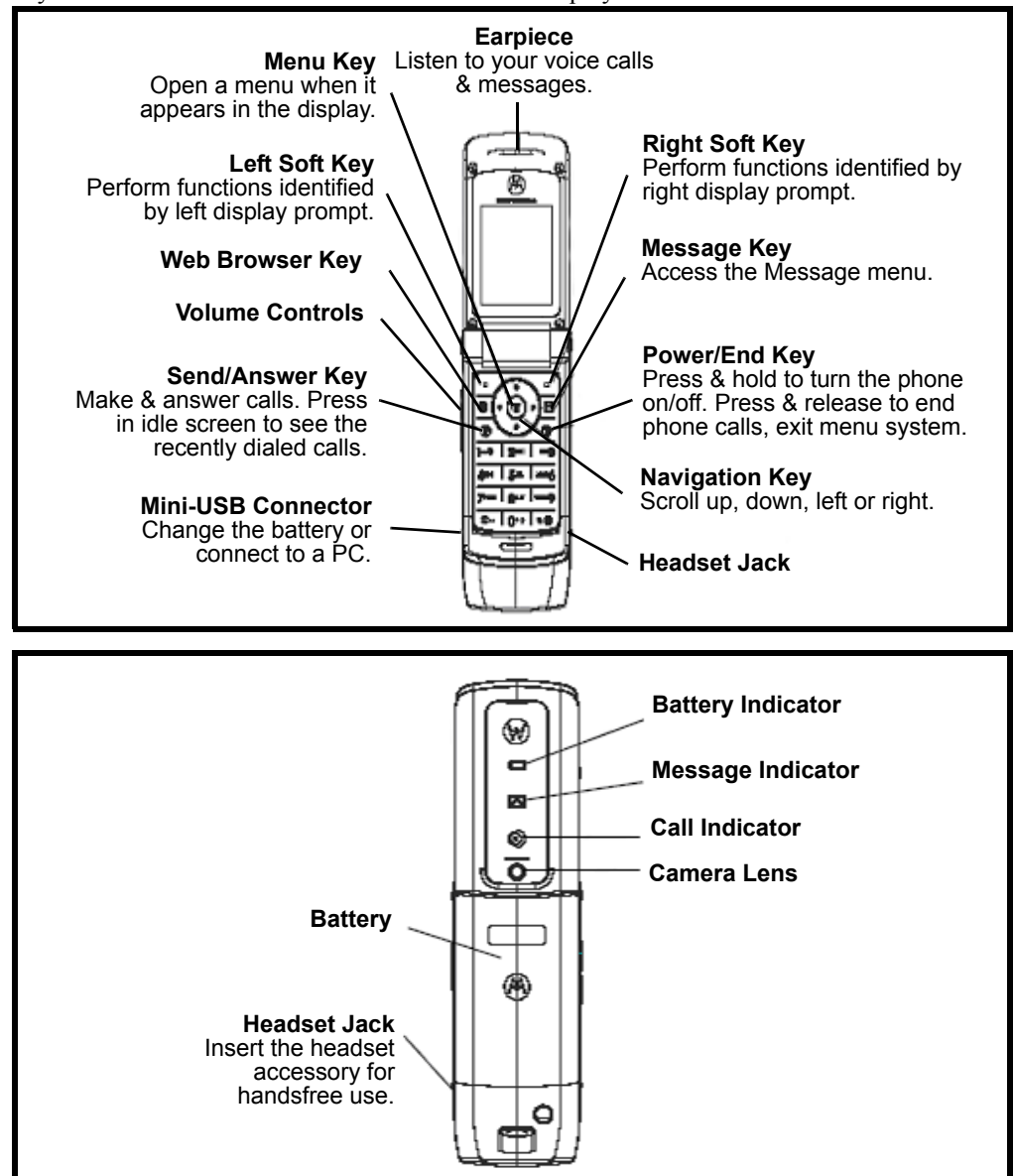


Figure 1. Phone Controls

Menu Navigation

W370/W375 telephones are equipped with a simplified icon and graphical-based user interface. See the table below for details of the W370/W375 menu structure. A five-way navigation key allows you to move easily through menus and confirm your selection.

Liquid Crystal Display (LCD)

The LCD provides a multicolor backlit color display with user-adjustable contrast settings for optimum readability in all light conditions. The bit-map 128 x 160 pixel display includes up to 3 lines of text, 1 line of icons, and 1 line of prompts.

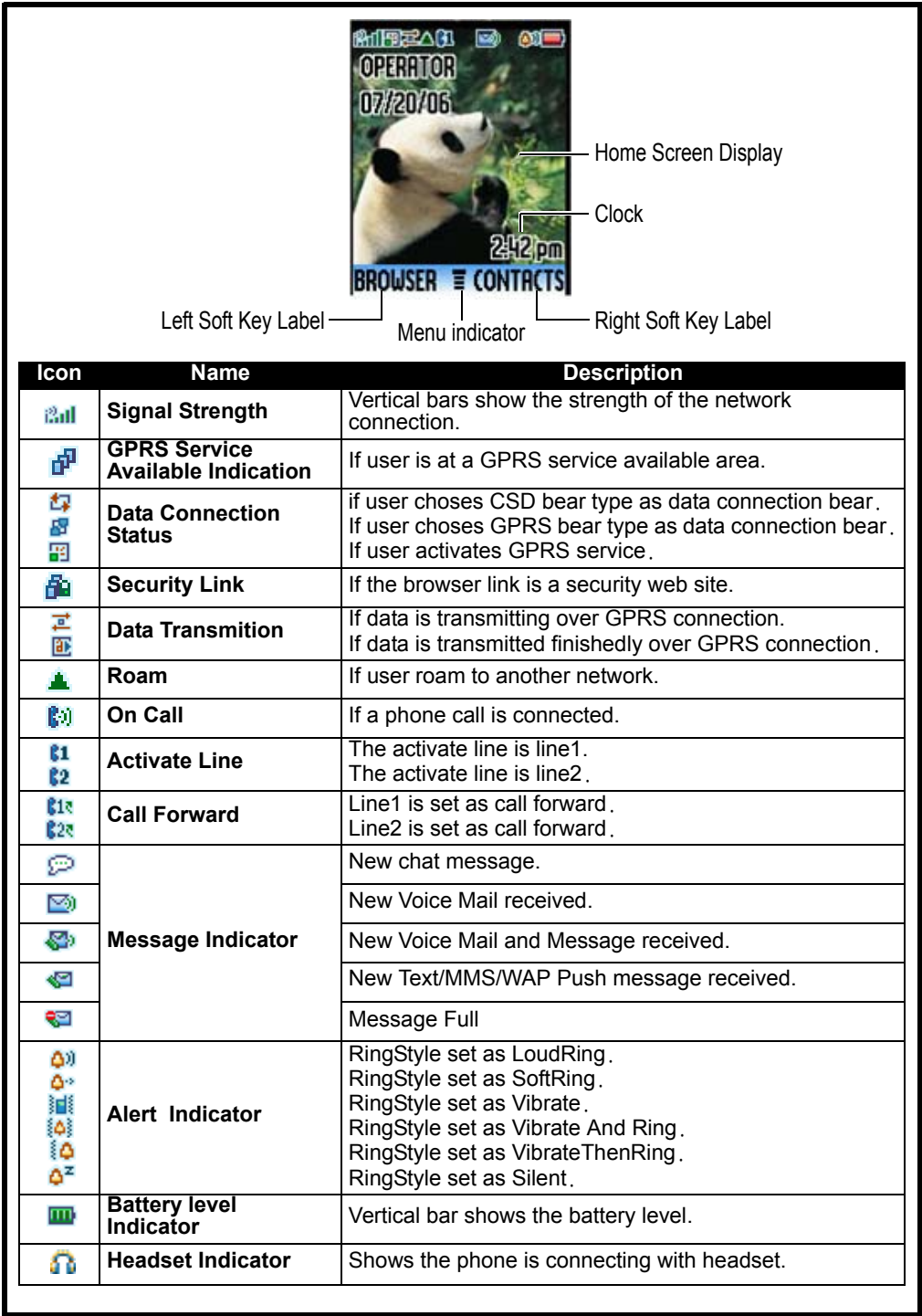


Figure 2. LCD Icons

User Interface Menu Structure

The table below shows a portion of the W370/W375 telephone menu structure.










Menu Map	
 Phonebook	 Web Access
 Recent Calls	<ul style="list-style-type: none"> • Start Browser • Web Shortcut • Go to URL • Web Session • Stored Pages • History • General Setting
<ul style="list-style-type: none"> • Received calls • Dialed Calls • NotePad • Call Times • Call Cost • Date Times • Date Volumes 	
 Messages	 Multimedia
<ul style="list-style-type: none"> • Create • Inbox • Draft • Outbox • Quick Notes • Voicemail • Browser Msgs • Info Services • MMS Templates 	<ul style="list-style-type: none"> • Camera • Pictures • Sounds • FM Radio
 Office Tools	 Personalize
<ul style="list-style-type: none"> • Calculator • MyMenu • Alarm Clock • Stop Watch • Chat • Dialing Services • STK Service • Calendar • Lantern 	<ul style="list-style-type: none"> • Home Screen • Main Menu • Color Setting • Greeting • Wallpaper • Screen Saver • Quick Dial
 Games & Apps	 Settings
<ul style="list-style-type: none"> • Football • Space • Crazy • Sound Settings 	<ul style="list-style-type: none"> • Ring Style • Call Forward • In Call Setup • Initial Setup • Phone Status • Headset • Network • Security • Easy Prefix • Lantern
<p>Note: The STK Service depends on your carrier's SIM card. You may not see this function. Chat, Quick Dial and Easy Prefix depend on your carrier's settings.. You may not see these features in your phone.</p>	

Figure 3. Telephone Menu Structure

Battery Function

The telephone displays a battery charge indicator icon in the idle screen to indicate the battery charge level. The gauge shows four levels: 100%, 66%, 33%, and Low Battery.

Removing the battery causes the phone to shut down immediately and lose any pending work (partially entered phone book entries or outgoing messages, for example).



Note: All batteries can cause property damage and/or bodily injury such as burns if a conductive material such as jewelry, keys, or beaded chains touches exposed terminals. The conductive material may complete an electrical circuit (short circuit) and become quite hot. Exercise care in handling any charged battery, particularly when placing it inside a pocket, purse, or other container with metal objects.



If the battery is removed while receiving a message, the message is lost.



To ensure proper memory retention, turn the phone OFF before removing the battery. Immediately replace the old battery with a fresh battery.

Operation

For detailed operating instructions, refer to the appropriate User Guide listed in the Related Publications section toward the end of this manual.

Tools and Test Equipment

The table below lists the tools and test equipment used on W370/W375 telephones. Use either the listed items or the equivalent.

Table 1: General Test Equipment and Tools

Motorola Part Number ¹	Description	Application
See Table 6	Charger	Used to charge battery and power phone
0180386A82	Antistatic Mat Kit (includes 66-80387A95 antistatic mat, 66-80334B36 ground cord, and 42-80385A59 wrist band)	Provides protection from damage to phone caused by electrostatic discharge (ESD)
-	Antistatic Gloves	Provides protection from damage to phone caused by electrostatic discharge (ESD)
8102430Z04	GSM / DCS / PCS Test SIM	Used to enable manual test mode
6680388B67	Disassembly tool, plastic with flat and pointed ends (manual opening tool)	Used during assembly/disassembly
6680388B01	Tweezers, plastic	Used during assembly/disassembly
-	T5 screw driver	Used with screw driver
-	camera jig	Used to remove a built-in camera (where present)

Table 1: General Test Equipment and Tools

Motorola Part Number ¹	Description	Application
HP34401A ²	Digital Multimeter	Used to measure battery voltage

1. To order in North America, contact Motorola Aftermarket and Accessories Division (AAD) by phone at (800) 422-4210 or FAX (800) 622-6210. Internationally, AAD can be reached by calling (847) 538-8023 or by fax (847) 576-3023.

2. Not available from Motorola. To order, contact Hewlett Packard at (800) 452-4844.



Figure 4. A screwdriver (T5), a pair of tweezers, and a camera jig



Note: This particular camera requires a unique camera jig (pictured on the far right) for disassembly of the camera, where present. You can order this tool from Motorola using the information presented above in Footnote 1.

Disassembly



Many of the integrated devices used in this phone are vulnerable to damage from electrostatic discharge (ESD). Ensure adequate static protection is in place when handling, shipping, and servicing any internal components.



Avoid stressing the plastic in any way to avoid damage to either the plastic or internal components.

Removing and Replacing the Battery



All batteries can cause property damage and/or bodily injury such as burns if a conductive material such as jewelry, keys, or beaded chains touches exposed terminals. The conductive material may complete an electrical circuit (short circuit) and become quite hot. Exercise care in handling any charged battery, particularly when placing it inside a pocket, purse, or other container with metal objects.

1. Ensure the phone is turned off.
2. Press the battery cover release button and then slide it away.



Figure 5. Opening the battery cover

3. Next, push the battery inward, and as it disengages pull it up and away from the battery compartment.



Figure 6. Removing the battery



There is a danger of explosion if the Lithium ion battery is replaced incorrectly. Replace only with the same type of battery or equivalent as recommended by the battery manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Removing and Replacing the SIM Card

1. Remove the battery, as described earlier.
2. Remove the SIM from its holder by sliding it in the direction shown below.



Figure 7. Removing the SIM Card

3. To replace, carefully slide the SIM into position in its socket.
The latch secures the SIM when correctly positioned over the terminals in the phone.
4. Replace the battery.

Removing and Replacing the Bottom Housing

1. Remove the SIM as described earlier.
2. Remove the cap.



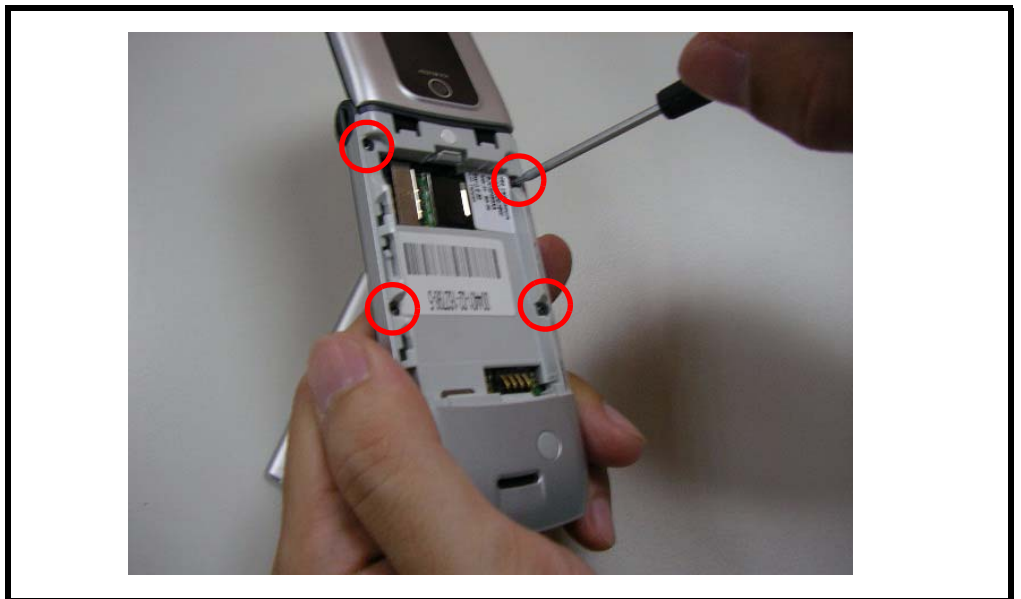
Figure 8. Removing the cap

3. Remove the two T5 screws. (Use torque force of 10.78 Ncm).



Figure 9. Removing the screws

4. Remove the four T5 screws. (Use torque force of 10.78 Ncm) .



(Figure 10. Removing the screws

5. Push housing to separate the latch.

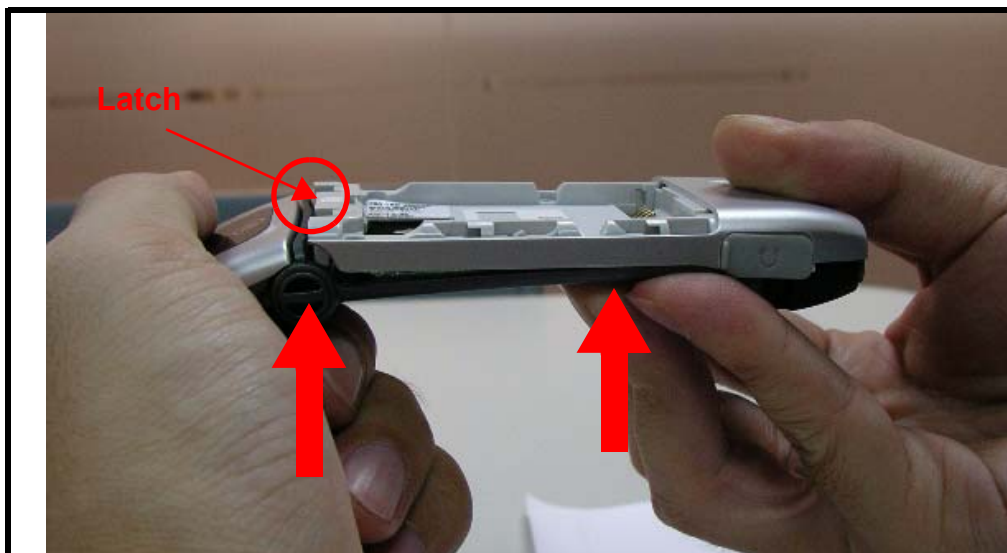


Figure 11. Disengaging the latches

6. Use one hand to grip the case firmly and pry it apart a fraction, then disengage 2 latches connecting it to the front housing.



Figure 12. Disengaging the latches

7. Pry the back housing away from the front.



Figure 13. Separating the back housing

Removing and Replacing the Spk-gasket Vibrator, rubber pad, and Speaker

1. Remove the bottom housing as described earlier.
2. Remove the spk-gasket.

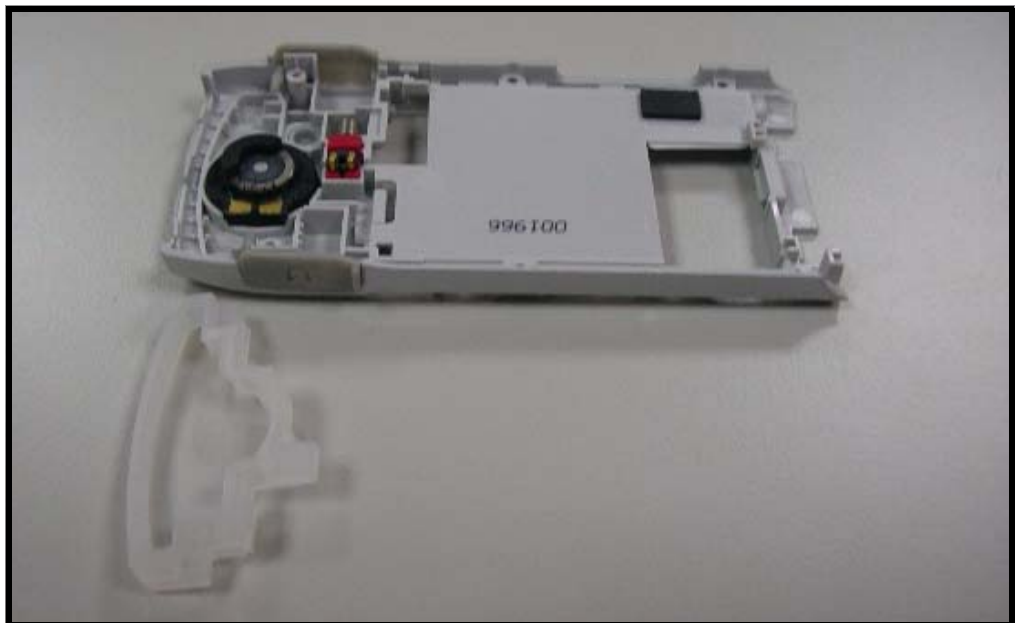


Figure 14. Removing the Spk-gasket

3. Remove the vibrator.

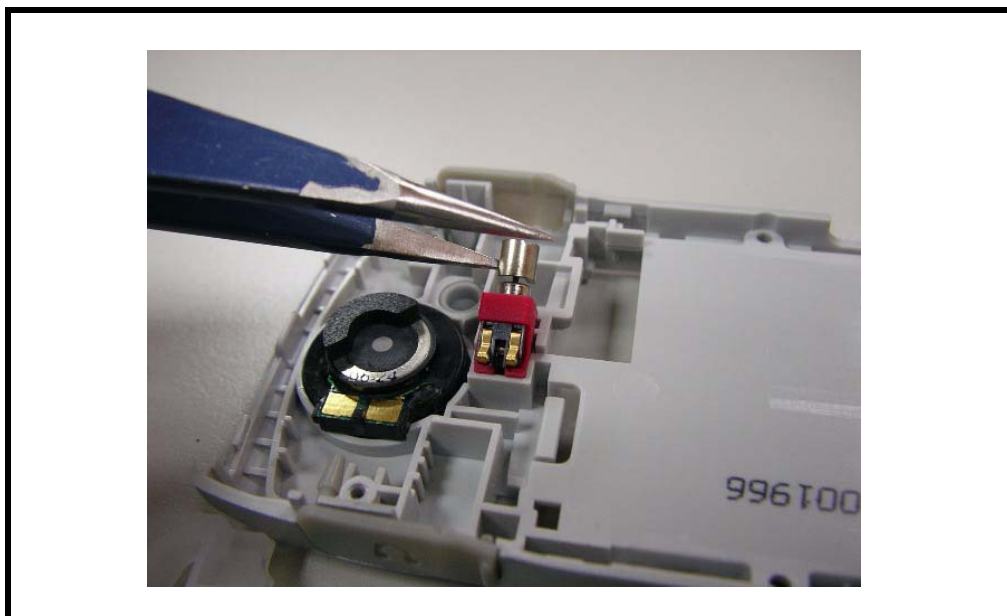


Figure 15. Removing the vibrator

4. Remove the two rubber pad.

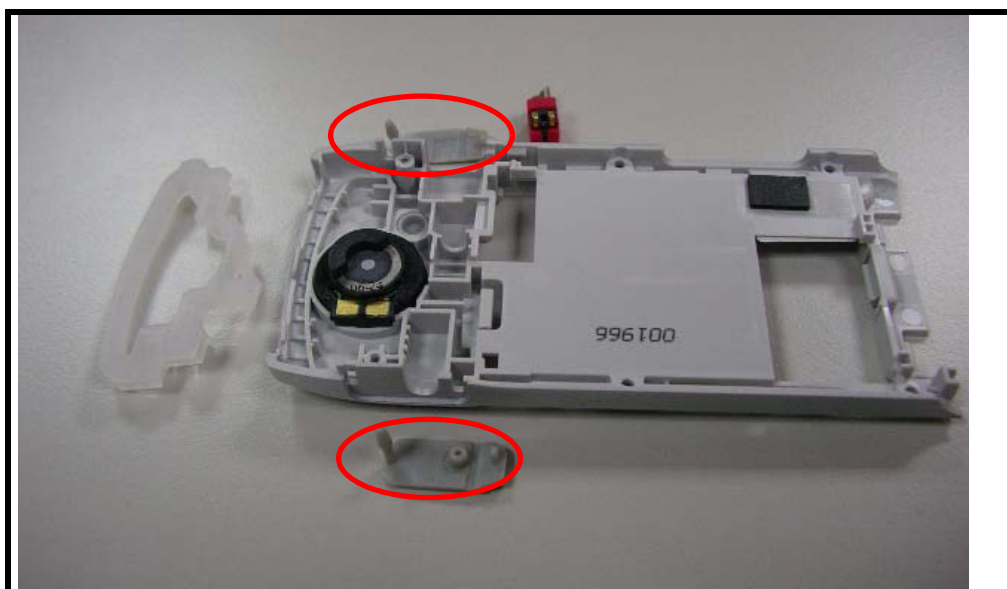


Figure 16. Removing the rubber pad

5. Insert a thin screwdriver or tweezers beneath the speaker chip, then gently pry it out.



Figure 17. Removing the speaker chip

Removing and Replacing the Main Board and Keypad

1. Remove the bottom housing as described earlier.
2. Use hand tooling pry out the conduct.
3. Need to replacing new conduct P/N#306AH80001W after repair process.



Figure 18. Removing the conduct

4. Remove the side rubber.



Figure 19. Removing the side rubber

5. Pry off the FPC connector.

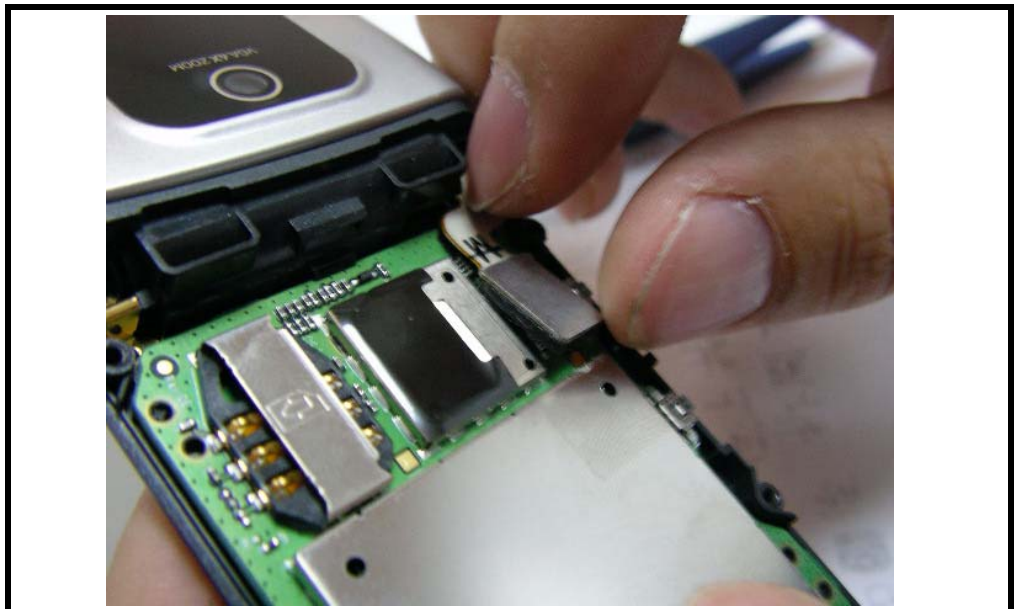


Figure 20. Prying off the FPC connector

6. Remove the main board.



Figure 21. Remove the main board

7. Push two clip to pry off the antenna.

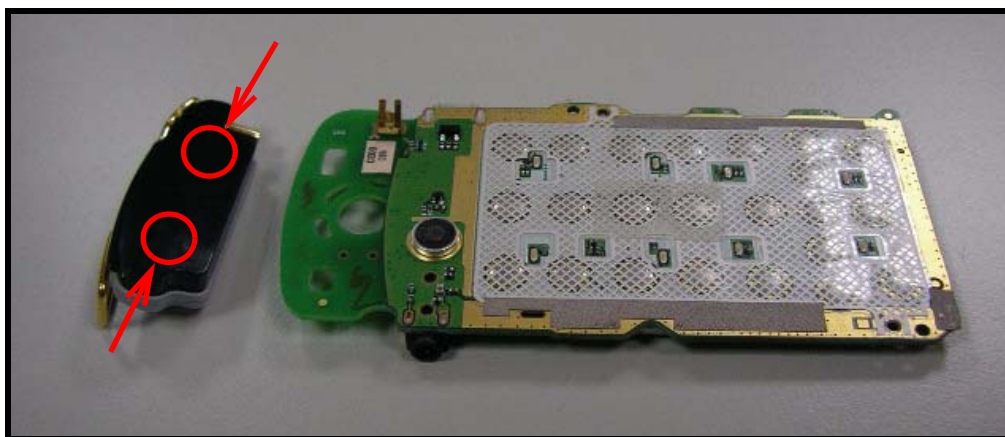


Figure 22. Prying the antenna

8. Pry off the microphone.

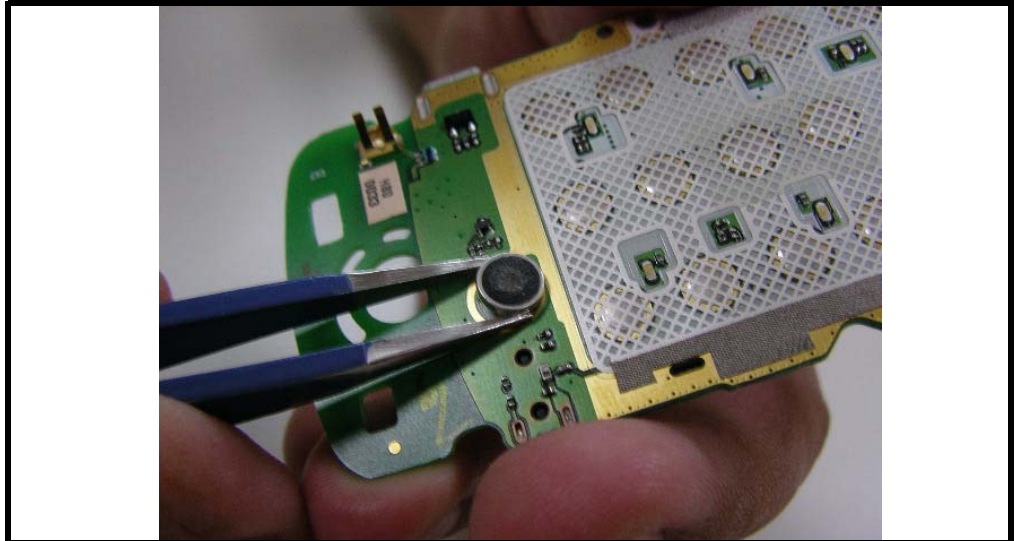


Figure 23. Prying the microphone

9. Pry off the spring, carefully when Removing and replacing spring.

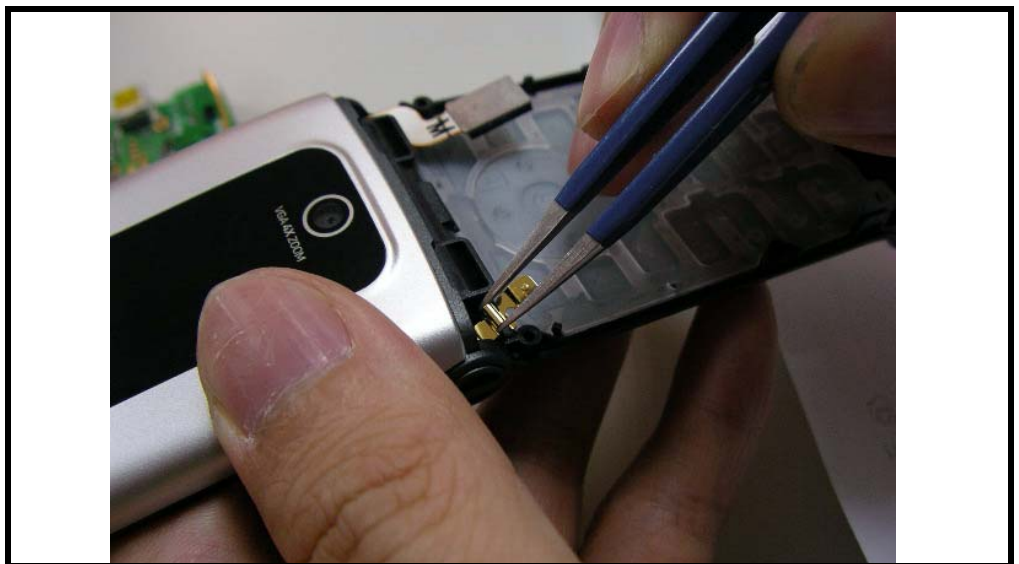


Figure 24. Prying the spring

10. Remove the keypad.



Figure 25. Removing the keypad

11. Remove the lanyard.

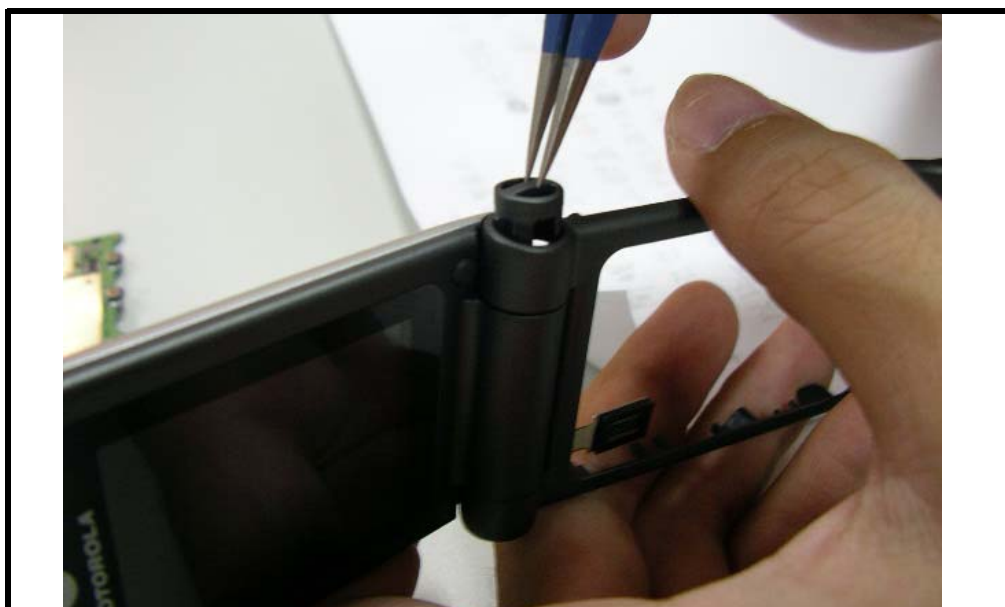


Figure 26. Removing the lanyard

Removing and Replacing the Top Housing

1. Remove the main board and keypad as described earlier.
2. Use hand tooling remove four rubber cover.



Figure 27. Remove four rubber cover

3. Remove four T5 screws. (Use torque force of 10.78 Ncm)



Figure 28. Removing the four T5 screws

4. With a flat pry bar, disconnect the two halves.



Figure 29. Disconnecting the two halves

5. Disconnect the two halves (they are joined by a total of 7 latches).

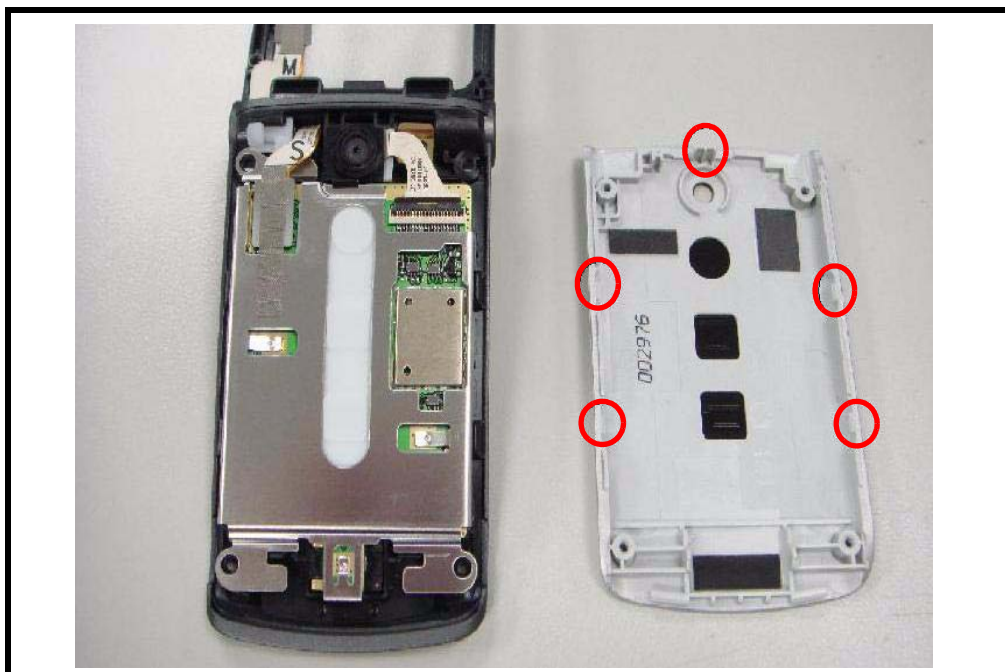


Figure 30. Separate the top housing

6. Remove the rubber.

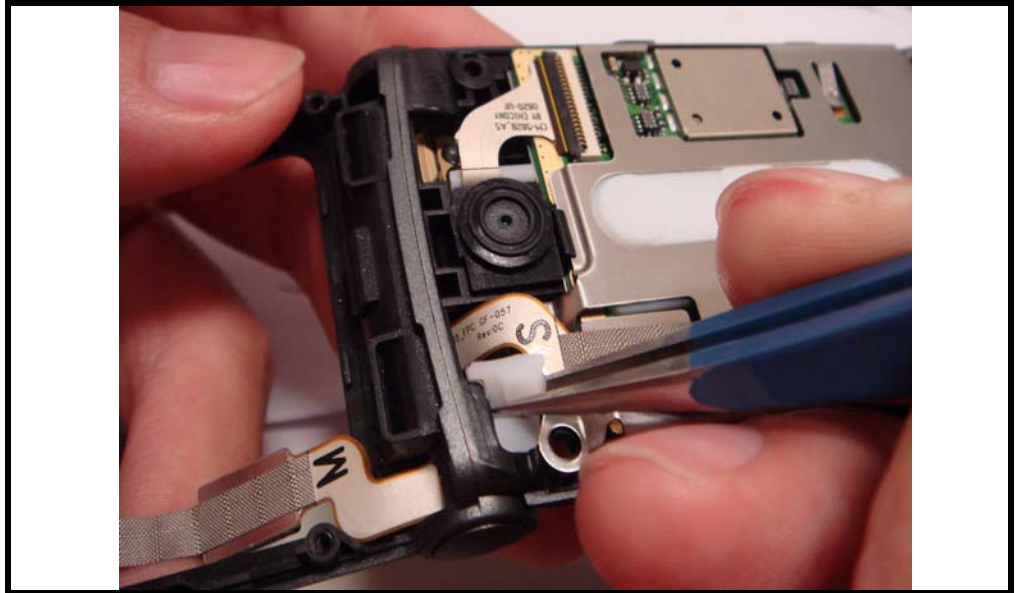


Figure 31. Removing the rubber

7. Use hand tooling remove the HINGE-KB.
Be sure you don't inadvertently damage the FPC .

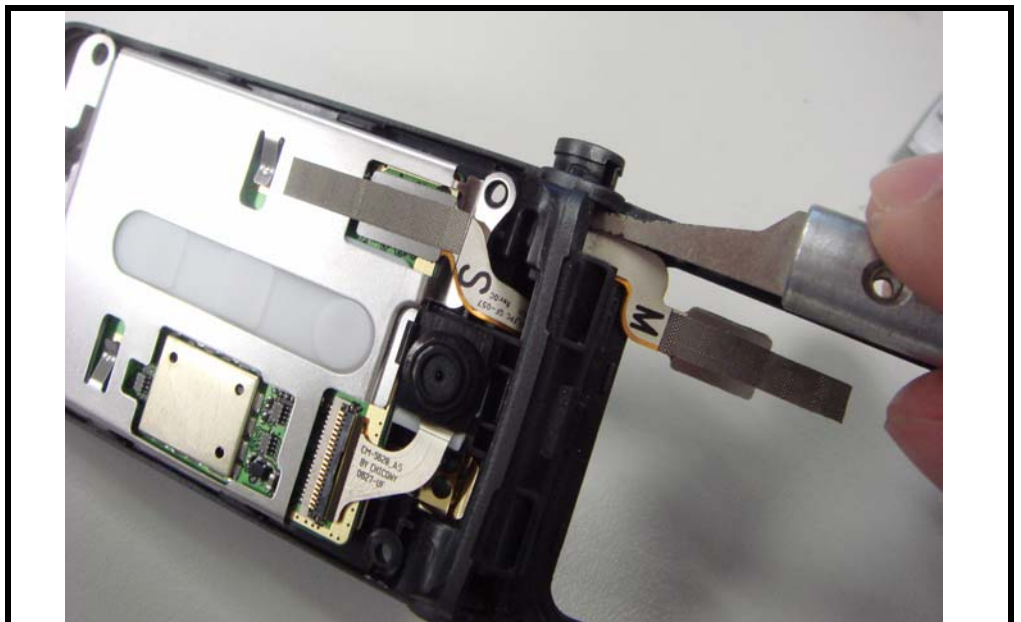


Figure 32. Removing the rubber

Removing and Replacing the Top Clamshell

1. Remove the Top Housing as described earlier.
2. Insert a hook into the left hinge space, press down, and then exert pressure by pressing the clamshell forward.



Figure 33. Exerting pressure on the clamshell

3. Gently disconnect the top clamshell, being careful to not snag or damage the FPC as it slips out of the notch that protects it.

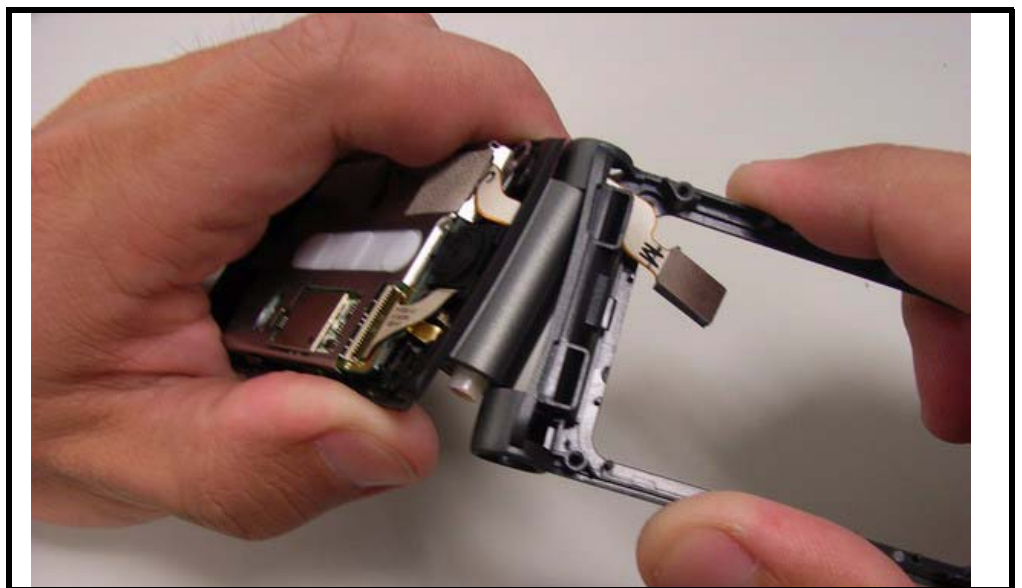


Figure 34. Disconnecting the top clamshell

Removing and Replacing the Bracket,Sub-Board,VGA module,and Receiver

1. Remove the top clamshell as described earlier.
2. Remove the conduct.
3. Need to replacing new conduct P/N#306AH80001W after repair process.



Figure 35. Removing the conduct

4. Pry off the FPC connector.



Figure 36. Prying off the FPC connector

5. Disengaging the three latches.



Figure 37. Disengaging the latches

6. Disengaging the three latches.

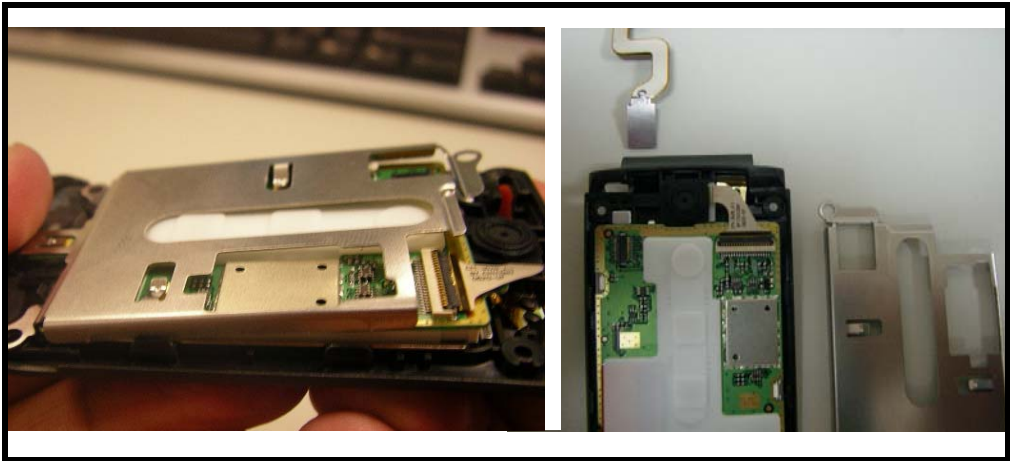


Figure 38. Separating the bracket

7. Pry off the Sub-board.

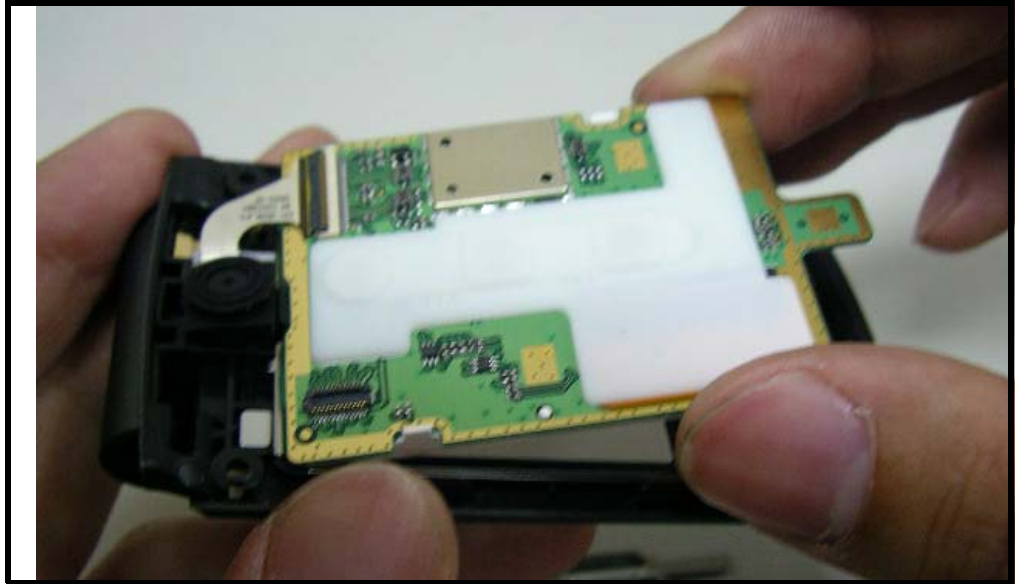


Figure 39. Removing the sub-board

8. Pry off the VGA FPC connector and remove VGA module.

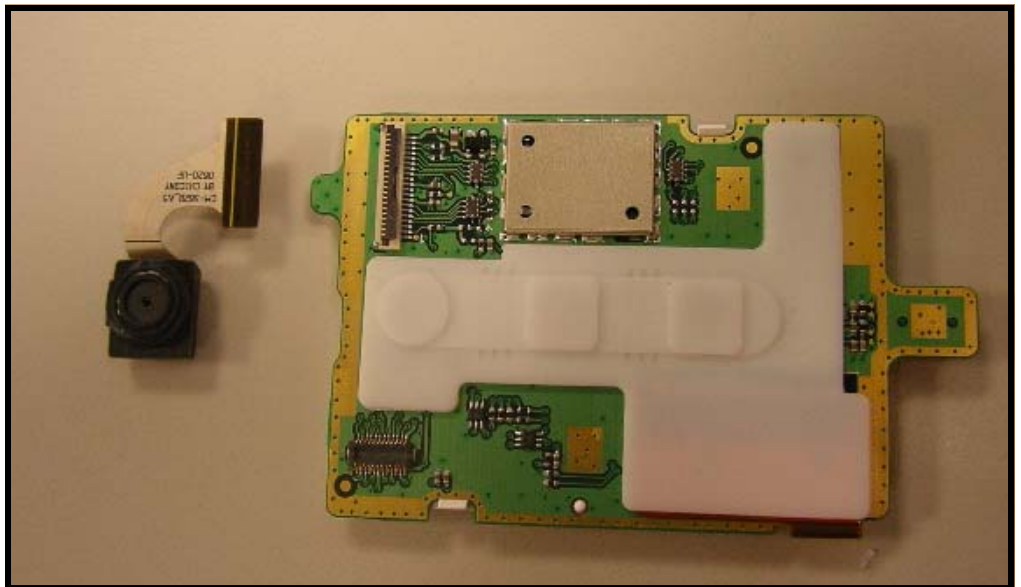


Figure 40. Prying off the VGA module

9. Pop out the receiver.
If you remove a functioning receiver, you will irreparably damage it and must therefore replace it.



Figure 41. Removing the receiver

Remark

1. In the event the SIM Card warps after being inserted. (shown as Figure 42 below)

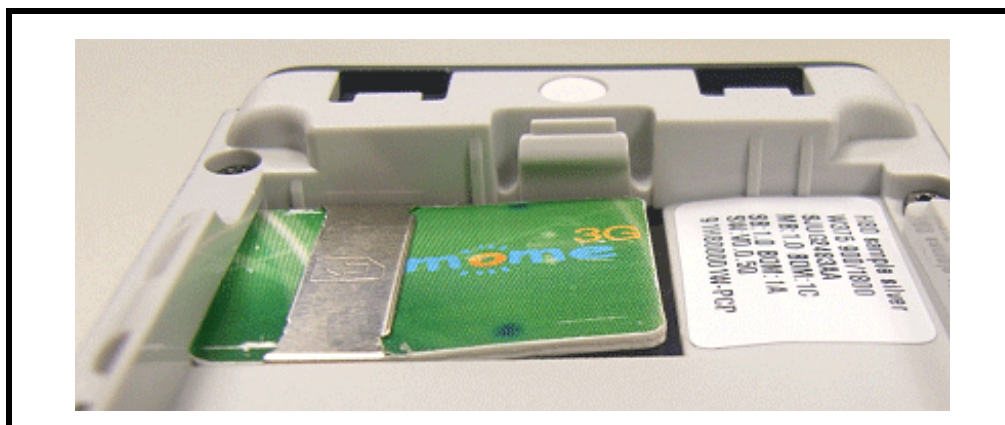


Figure 42.

2. Solution : The angle of insertion must be lower than the surface of the Shielding Can, when the factory disassembles the Shielding Can to rework. (shown in the following figure)

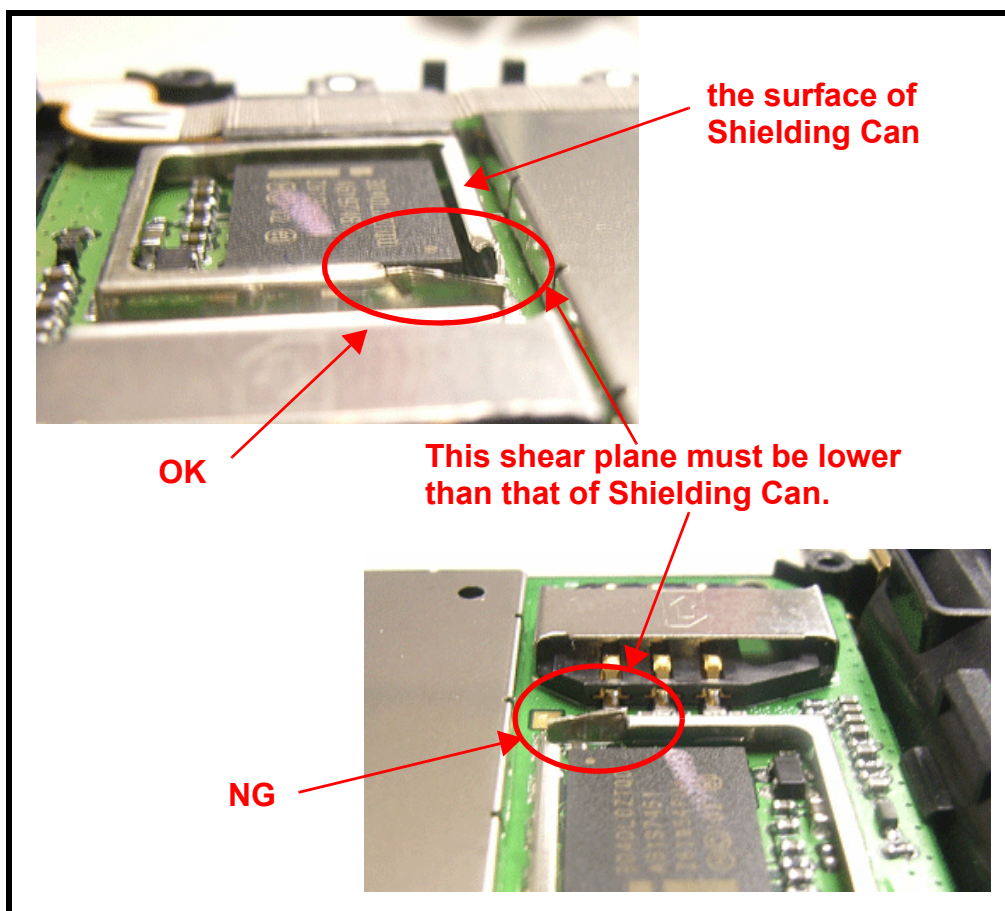


Figure 43.

3.1 Cover the shielding case(P/N:3052H80005W) as the figure 44.

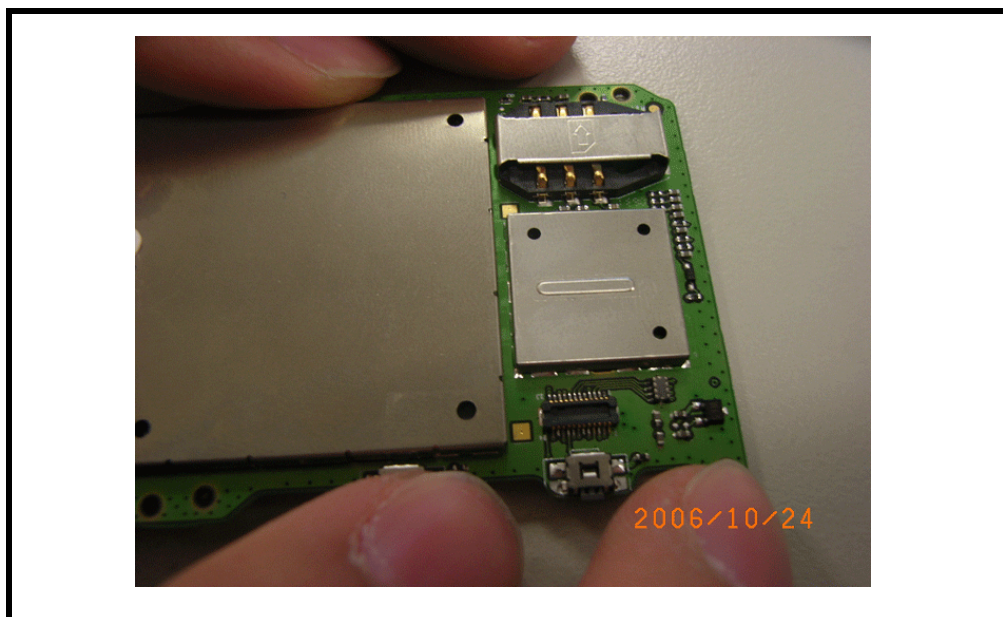


Figure 44.

3.2 Stick the black mylar(P/N:3064H80001W) on the surface of shielding case as the figure 45.

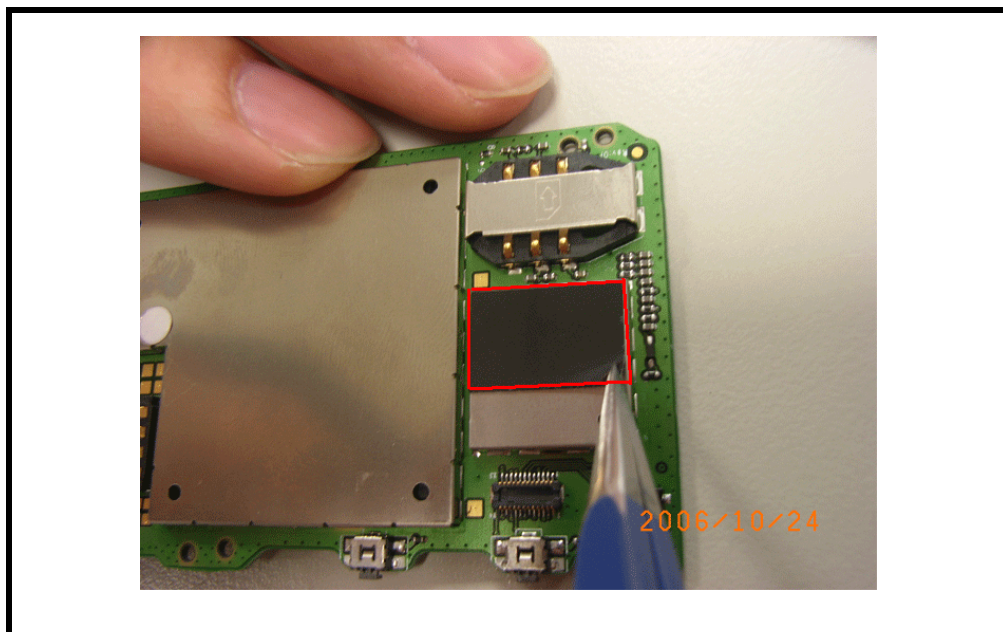


Figure 45.

Subscriber Identity Module (SIM) and Identification Label

SIM

A SIM is required to access the existing local GSM network, or remote networks when traveling (if a roaming agreement has been made with the provider).

The SIM contains:

- All the data necessary to access GSM services
- The ability to store user information such as phone numbers
- All information required by the network provider to provide access to the network

Identification

Each Motorola GSM phone is labeled with a variety of identifying numbers. The following information describes the current identifying labels.

Mechanical Serial Number (MSN)

- The MSN is an individual unit identity number and remains with the unit throughout its life.
- The MSN can be used to log and track a phone on Motorola's Service Center Database.
- The MSN is divided into 4 sections as shown in Figure 46.

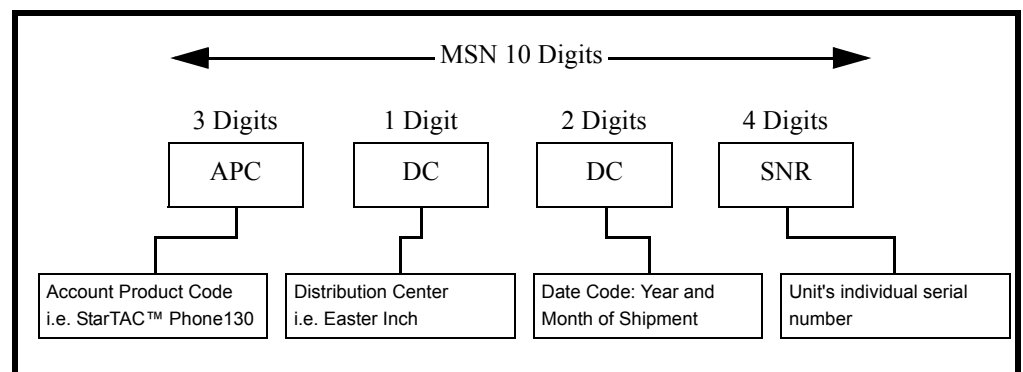


Figure 46. MSN Divisions

International Mobile Station Equipment Identity (IMEI)

The International Mobile Station Equipment Identity (IMEI) number is an individual number unique to the Transceiver and is stored within the unit's memory. The IMEI uniquely identifies an individual mobile station and thereby provides a means for controlling access to GSM networks based on mobile station types or individual units. The full IMEI structure is listed in the table below.

Table 2: IMEI Number Breakdown

TAC	Serial Number	Check Digit
NNXXXXXX	ZZZZZZ	A

Where

- TAC** Type Allocation Code, formerly known as Type Approval Code
- NN** Reporting Body Identifier (BABT or CTIA)
- XXXXXX** Type Identifier (defined by BABT or CTIA)
- ZZZZZZ** Individual unit serial number
- A** Phase 1 = 0.
Phase 2 & 2+= check digit and is defined as a function of all other IMEI digits

Other label number configurations present are:

- TRANSCEIVER NUMBER:** Identifies the product type. Normally the SWF number. (i.e. V100).
- PACKAGE NUMBER:** Identifies the equipment type, mode, and language in which the product is shipped.

Troubleshooting

W370/W375 Troubleshooting Chart

Level 1 and 2 Troubleshooting Chart

Symptom	Probable Cause	Verification and Remedy
1. Phone will not turn on or stay on.	a) Battery either discharged or defective.	Measure battery voltage across a 50 ohm (>1 Watt) load. If the battery voltage is <3.25 Vdc, recharge the battery using the appropriate battery charger. If the battery will not recharge, replace the battery. If battery is not at fault, proceed to b.
	b) Battery terminals open or misaligned.	Visually inspect the battery terminals on both the battery and the phone. Realign and, if necessary, either replace battery or refer to a Level 3 Service Center for the battery connector replacement. If battery terminals are not at fault, proceed to c.
	c) Keypad defective.	Replace the keypad. Temporarily connect a +3.6 Vdc supply to the battery terminals. Press and hold the PWR button. If phone turns on and stays on, disconnect the dc power source and reassemble with the new keypad.
2. Phone exhibits poor reception or erratic operation such as calls frequently dropping or weak or distorted audio.	Connections to or from lower PCB defective.	Check connection between the antenna and the lower PCB.
3. Display is erratic, or provides partial or no display.	LCM defective.	Replace the LCM. Verify that the fault has been cleared and reassemble the phone with the new LCM.
4. Incoming call alert transducer audio distorted or volume is too low.	Speaker defective.	Replace the speaker as described in the procedures. Verify that the fault has been cleared and reassemble the phone with the new speaker.
5. Phone transmit audio is weak. (usually indicated by called parties complaining of difficulty in hearing voice).	Microphone defective.	Replace the microphone as described in the procedures. Verify that the fault has been cleared and reassemble the phone with the new microphone.
6. Receive audio from earpiece speaker is weak or distorted.	a) Connections to or from lower PCB defective.	Check connection between the antenna and the lower PCB. If the connection is OK, proceed to b.
	b) Earpiece Speaker defective.	Temporarily replace the earpiece speaker with a known good earpiece speaker. Ensure good connection. Place a call and verify improvement in earpiece audio. If fault is cleared, reassemble the phone with the good earpiece speaker.

Level 1 and 2 Troubleshooting Chart (Continue)

Symptom	Probable Cause	Verification and Remedy
7. Phone will not recognize or accept SIM card.	SIM card defective.	Check the SIM card contacts for dirt. Clean if necessary, and check if fault has been cleared. If the contacts are clean, insert a known good SIM card into the phone. Power up the phone and confirm that the card has been accepted. If the fault no longer exists, replace the defective SIM card.
8. Keypad not functioning.	Keypad defective.	Use alcohol to wipe the keypad metal dome. Check if fault has been cleared. If the fault is still present, either replace the keypad or refer to a Level 3 Service Center for the keypad metal dome replacement.
9. Vibrator feature not functioning.	a) Vibrator faulty.	Check general condition of vibrator. If it is good, proceed to b.
	b) Vibrator defective.	Replace the defective vibrator.
10. No or weak audio when using headset.	a) Headset plug not fully pushed.	Ensure the headset plug is fully seated in the jack. If the seated is OK, proceed to b.
	b) Headset defective.	Temporarily replace the headset with a known good headset. Ensure good seated. Place a call and verify improvement in headset audio. If fault is cleared, replace the defective headset.
11. Camera module not functioning. (for W375)	Camera module defective.	Replace the camera module as described in the procedures. Verify that the fault has been cleared and reassemble the phone with the new camera module.

Programming: Software Upgrade and Flexing

Contact your local technical support engineer for information about equipment and procedures for flashing and flexing.

Part Number Charts

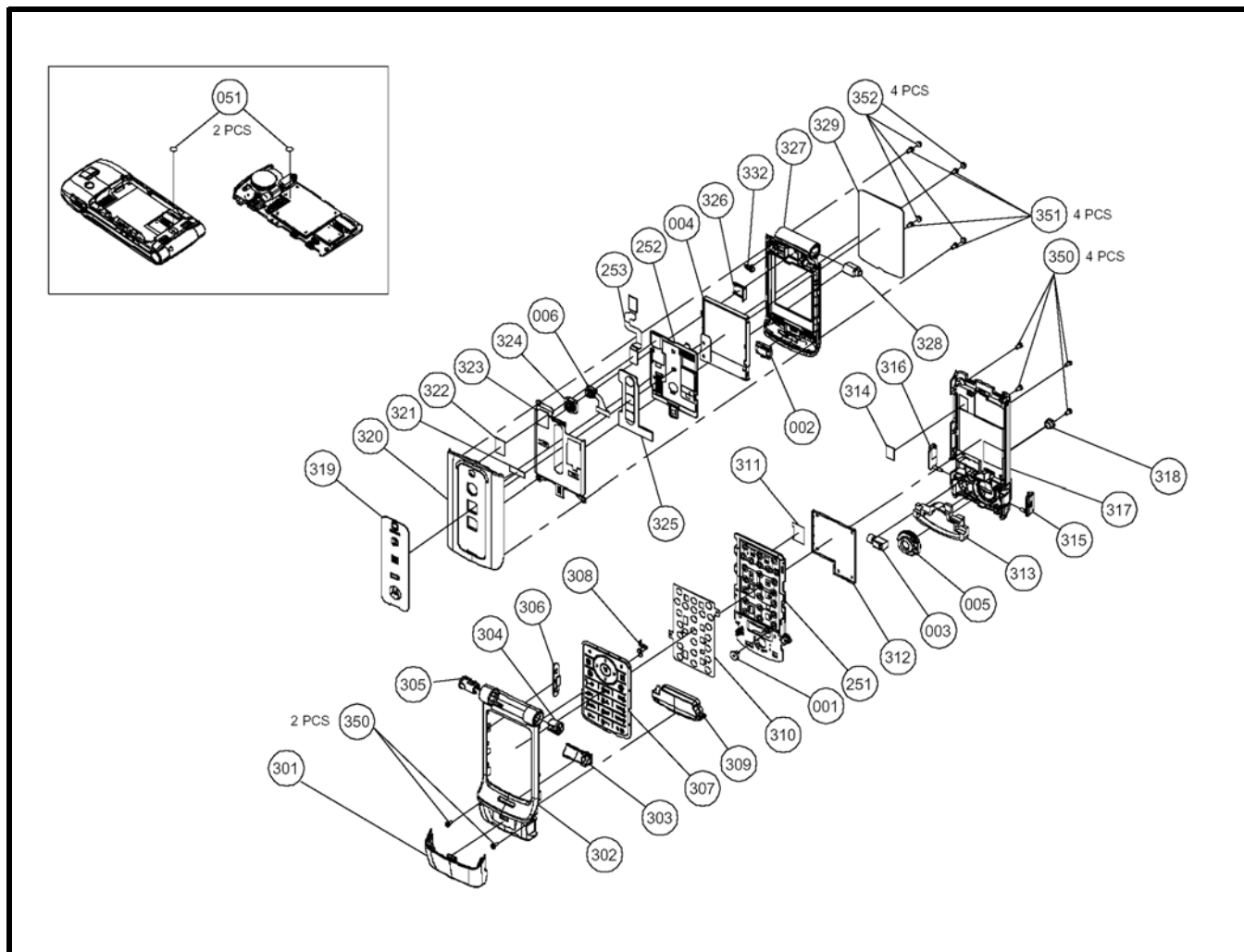


Figure 47. W375 Exploded View Diagram

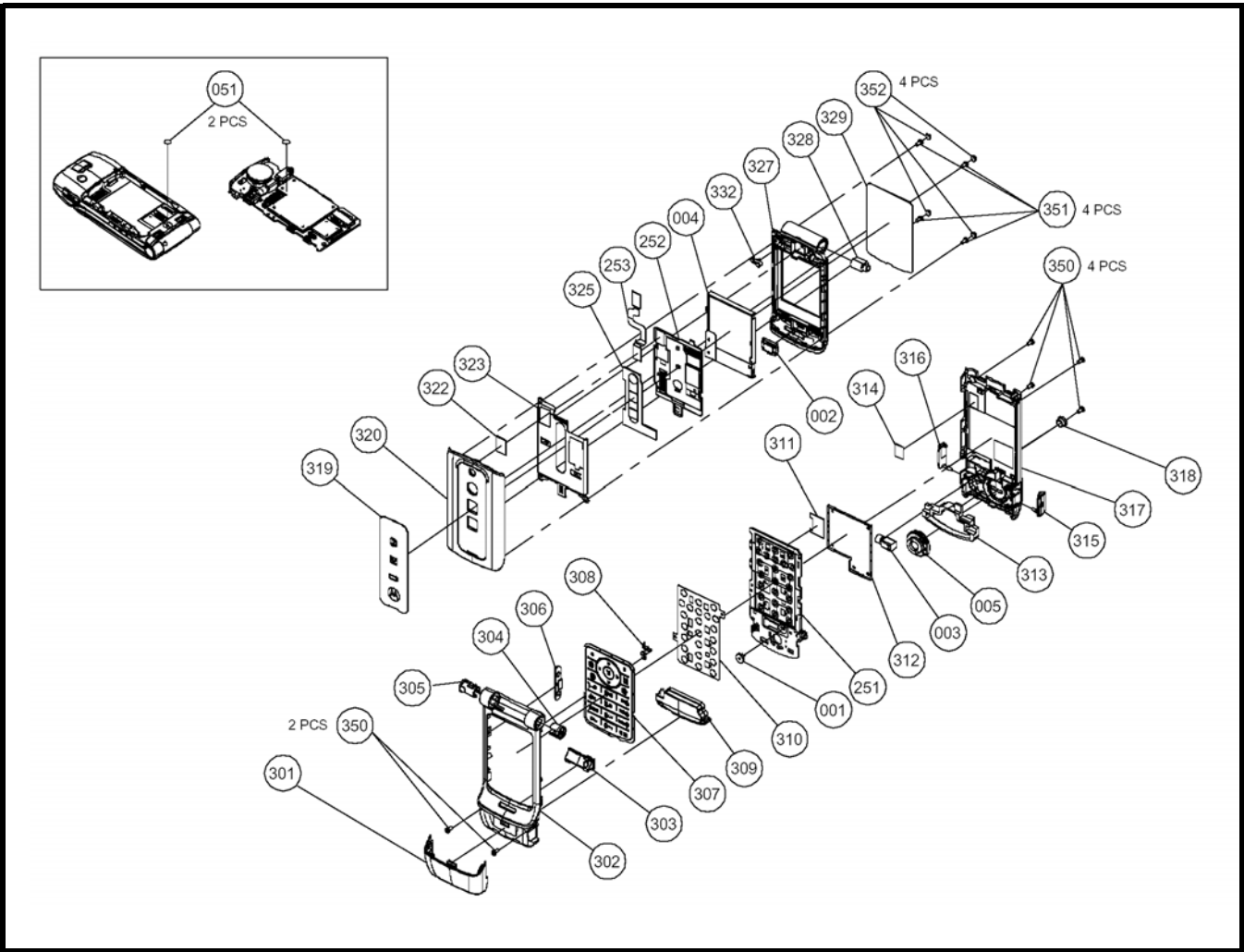


Figure 48. W370 Exploded View Diagram

Exploded View Parts List

Table 3: W375 Exploded View Parts List

Item Number	Part Number	Description	Specification
001	2220601101W	MIC	ACM6011-02P22-413 ϕ 6*1.1 AAC
002	2240071102W	RECEIVER	SDRP0711KJ01-F1-G 32ohm 7*11mm
003	3930407501W G	SPR-VIB	ϕ 4*L7.55 1.3V LA4-458DB COPAL
004	7630001895W	LCM	TD018THEJ8 128*160 TOPPOLY
005	2250160807W	SPEAKER	DMS1608F-05-PC-FB-G 8ohm AAC
006	7651H90001W	CAMERA	H90 CM-5628 VGA CHICONY
051	82E5803301W G	LABEL	E58 WATERPROOF LABEL ϕ 4mm
251	6910890001W G	F/WMB 33	H80 GA-114
252	6320500001W G	SMT LCM/B	H80/H80A GS-063
253	21H80030C1W	PCB-ASSY	H80 GF-057 REV:0C FB
300	5501350001W G	ME/PT 33	H80 SILVER
301	254JH80001W	COVER	H80-PC-SILVER
302	2526H80001W	KB UPP-C	H80-IXEF1622-BLACK
303	3023H80001W	MIC-HOLD	H80-RUBBER-BLACK
304	2551H80001W	LANYARD	H80-PC-BLACK
305	2538H80001W	HINGE-KB	H80-PC-BLACK
306	3106H80001W	VOL-KEY	H80-RUBBER-SILVER-1
307	3101H80001W	DIAL-KEY	H80-RUBBER-BLACK-23
308	3041H80001W	SPRING	H80-C1720-4.8*12.3*0.2-KB
309	23A1H80001W	ANT-ASSY	H80-EU TRI BAND
310	3109H80001W	MET-DOME	H80- ϕ 4*170g-23
311	3064H80001W	MYLAR	H80-12.8*13.5*0.15
312	3052H80001W	SHIELD-C	H80-SUS304-40.2*34.2*1.50 MCOV
313	302FH80001W	SPK-GASKE	H80-RUBBER-39*18.4*4.7
314	303LH80002W	BTB-SPON	H80-PORON-6.2*8.8*1-KB
315	302BH80002W	RUBBERPAD	H80-TPU-SILVER-AUDIO
316	302BH80001W	RUBBERPAD	H80-TPU-SILVER-USB
317	2527H80001W	KB LOW-C	H80-PC-SILVER
318	3028H80001W	RF-COV	H80-RUBBER-SILVER
319	254AH80001W	LED-LENS	H80-MR58-BLACK
320	2517H80001W	DISLOWASY	H80-SILVER
321	303LH80003W	BTB-SPON	H80-PORON-4*12*0.3-CAMERA
322	303LH80001W	BTB-SPON	H80-PORON-7.5*11*0.3-DIS
323	305AH80001W	BRACKET	H80-SUS304-39*62.9*0.3
324	302AH80001W	RUBBER	H80-8.6*9.4*4.3-VGA COVER
325	302AH80003W	RUBBER	H80-RUBBER-TRANSPARENT-LED
326	302AH80002W	RUBBER	H80-10.7*7.9*4.2-VGA BASE
327	2516H80001W	DISUPPASY	H80-BLACK
328	3407119001W	HINGE	H96-FE+AU-F7*11.95-5 PREXCO
329	2541H80001W	LCD-LENS	H80-MR58-TRANSPARENT
332	302BH80007W	RUBBERPAD	H80-SILICON-6*7-WHITE-HINGE
350	3501745101W	SCREW	TORX M1.7*4.5-BLACK-NI KL-IXEF
351	3501733103W	SCREW	TORX M1.7*3.3-BLACK-NI KL
352	254CH80001W	SCREW-COV	H80-RUBBER-BLACK

Table 4: W370 Exploded View Parts List

Item Number	Part Number	Description	Specification
001	2220601101W	MIC	ACM6011-02P22-413 ϕ 6*1.1 AAC
002	2240071102W	RECEIVER	SDRP0711KJ01-F1-G 32ohm 7*11mm
003	3930407501W	SPR-VIB	ϕ 4*L7.55 1.3V LA4-458DB COPAL
004	7630001895W	LCM	TD018THEJ8 128*160 TOPPOLY
005	2250160807W	SPEAKER	DMS1608F-05-PC-FB-G 8ohm AAC
051	82E5803301W	LABEL	E58 WATERPROOF LABEL ϕ 4mm
251	6910890011W	F/WMB 33	H80A GA-114
252	6320500011W	SMT LCM/B	H82A GS-063
253	21H80030C1W	PCB-ASSY	H80 GF-057 REV:0C FB
300	5501430001W	ME/PT 33	H82A SILVER
301	254JH80001W	COVER	H80-PC-SILVER
302	2526H80001W	KB UPP-C	H80-IXEF1622-BLACK
303	3023H80001W	MIC-HOLD	H80-RUBBER-BLACK
304	2551H80001W	LANYARD	H80-PC-BLACK
305	2538H80001W	HINGE-KB	H80-PC-BLACK
306	3106H80001W	VOL-KEY	H80-RUBBER-SILVER-1
307	3101H80001W	DIAL-KEY	H80-RUBBER-BLACK-23
308	3041H80001W	SPRING	H80-C1720-4.8*12.3*0.2-KB
309	23A1H80A01W	ANT-ASSY	H80A-US TRI BAND
310	3109H80001W	MET-DOME	H80- ϕ 4*170g-23
311	3064H80001W	MYLAR	H80-12.8*13.5*0.15
312	3052H80001W	SHIELD-C	H80-SUS304-40.2*34.2*1.50 MCOV
313	302FH80001W	SPK-GASKE	H80-RUBBER-39*18.4*4.7
314	303LH80002W	BTB-SPON	H80-PORON-6.2*8.8*1-KB
315	302BH80002W	RUBBERPAD	H80-TPU-SILVER-AUDIO
316	302BH80001W	RUBBERPAD	H80-TPU-SILVER-USB
317	2527H80001W	KB LOW-C	H80-PC-SILVER
318	3028H80001W	RF-COV	H80-RUBBER-SILVER
319	254AH82A01W	LED-LENS	H82A-MR58-BLACK
320	2517H80001W	DISLOWASY	H80-SILVER
322	303LH80001W	BTB-SPON	H80-PORON-7.5*11*0.3-DIS
323	305AH80001W	BRACKET	H80-SUS304-39*62.9*0.3
325	302AH80003W	RUBBER	H80-RUBBER-TRANSPARENT-LED
327	2516H80001W	DISUPPASY	H80-BLACK
328	3407119001W	HINGE	H96-FE+AU-F7*11.95-5 PREXCO
329	2541H80001W	LCD-LENS	H80-MR58-TRANSPARENT
332	302BH80007W	RUBBERPAD	H80-SILICON-6*7-WHITE-HINGE
350	3501745101W	SCREW	TORX M1.7*4.5-BLACK-NI KL-IXEF
351	3501733103W	SCREW	TORX M1.7*3.3-BLACK-NI KL
352	254CH80001W	SCREW-COV	H80-RUBBER-BLACK



There is a danger of explosion if the Lithium ion battery pack is replaced incorrectly. Replace only with the same type of battery or equivalent as recommended by the battery manufacturer. Dispose of used batteries according to the manufacturer's instructions.

To order parts please use the following Link:

<https://servicelink3.motorola.com>

(Password is required)

For information on ordering parts please contact EMEA at +49 461 803 1638.

Accessories

Table 5: List of Accessories

Description	Part Number
Power Solutions	
BQ50 battery 850 mAh	SNN5804A
BT50 battery 850 mAh	SNN5771A
EMU Switch Mode Midrate (PRC)	SPN5188B
EMU Switch Mode Midrate (US)	SPN5185B
EMU Switch Mode Midrate (Taiwan)	SPN5216C
EMU Switch Mode Midrate (Euro)	SPN5189B
EMU Switch Mode Midrate (HK/UK)	SPN5190B
EMU Switch Mode Midrate (Australia)	SPN5193B
EMU Switch Mode Midrate (India)	SPN5194B
EMU Switch Mode Midrate (Mexico)	SPN5186B
EMU Switch Mode Midrate (Brazil)	SPN5187B
EMU Switch Mode Midrate (Arg)	SPN5192B
EMU Switch Mode Dual Rate (Brazil)	SPN5196B
EMU Switch Mode Dual Rate (Arg)	SPN5197B
EMU Switch Mode Dual Rate (PRC)	SPN5198B
EMU Switch Mode Dual Rate (HK)	SPN5199B
EMU Switch Mode Dual Rate (Mex)	SPN5200B
EMU Switch Mode Dual Rate (US)	SPN5202B
EMU Switch Mode Dual Rate (Twn)	SPN5270B
In-Vehicle	
VC700 EMU Power Adapter	SYN0847A
Audio&Connectivity	
Mini USB/USB/Serial Data Cable	SKN6371B/C
Mono Earbud Headset (Black)	SYN8390B
Mono Earbud Headset (Silver)	AAYN4264B
One-Touch Headset	SYN8419C
Stereo One-Touch Earbud Headset	CHYN4516B
Stereo One-Touch Earbud Headset	SYN1603B
Right-Angle Adapter	SKN6182A
Audio Converter	SKN6183A
Consumer&Personalization	
Silver Lanyard (Asia except PRC)	AAYN4402A
Silver Lanyard	CHYN4546



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Personal Communications Sector,
Sawgrass International Concourse
789 International Parkway Room S2C
Sunrise, FL 33323